

USQ

**Unreviewed Safety Question
Activity Report
2005-02**



April – June 2005

Office of Facility Safety (EH-2)

Office of Environment, Safety and Health

*Helping the Field Succeed with
Safe and Reliable Operations*

U.S. Department of Energy

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Introduction

The Unreviewed Safety Question (USQ) process alerts the Department of Energy (DOE) to events, conditions, or actions that are not within the DOE-approved safety basis of a facility or operation and ensures appropriate DOE line management action. Figure 1 shows the steps in the USQ process.

Part of the mission and function of the Office of Facility Authorization Bases (EH-23), which is a part of the Office of Facility Safety (EH-2), is to maintain operational awareness of the Department's USQ activities. EH-23 staff members prepare a quarterly *USQ Activity Report* showing the status of USQs across the DOE complex. To prepare the activity report and develop complex-wide statistics and insights, staff members:

- review and analyze Occurrence Reporting and Processing System (ORPS) reports on USQs identified at DOE sites,
- determine the causes of USQs related to safety basis documents, and
- maintain a USQ database for monitoring and tracking purposes.

Since 2001, EH-23 has produced more than 20 periodic reports and catalogued over 250 USQs in a database. USQs identified from April 2005 through June 2005 are summarized in the current report.

USQ

Unreviewed Safety Question (USQ) means a situation where

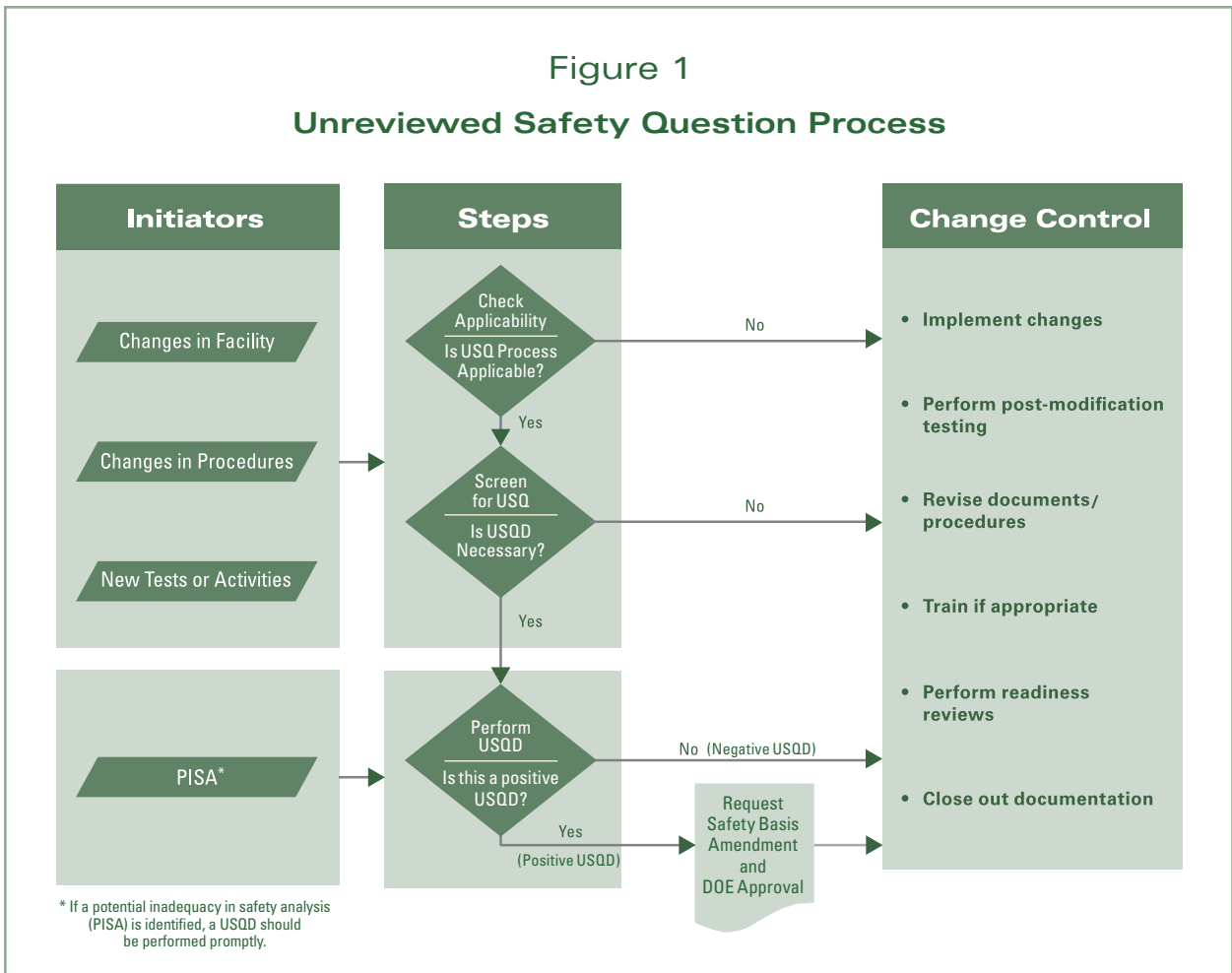
- (1) The probability of the occurrence or the consequences of an accident or the malfunction of equipment important to safety previously evaluated in the documented safety analysis could be increased;
- (2) The possibility of an accident or malfunction of a different type than any evaluated previously in the documented safety analysis could be created;
- (3) A margin of safety could be reduced; or
- (4) The documented safety analysis may not be bounding or may be otherwise inadequate.

10 CFR 830.3

The existence of a USQ does not mean that the facility or operation is unsafe. The USQ process alerts DOE to events, conditions, or actions that affect the approved facility safety basis and ensures that DOE line management takes appropriate action.



Figure 1
Unreviewed Safety Question Process



Purpose of the USQ Process

The Unreviewed Safety Question process means the mechanism for keeping a safety basis current by reviewing potential unreviewed safety questions, reporting them to DOE, and obtaining approval from DOE prior to taking any action addressing them.

10 CFR 830.3

The USQ process is primarily applicable to the Documented Safety Analysis (DSA). The DSA must include conditions of approval in safety evaluation reports and facility specific commitments made in compliance with DOE Rules, Orders or Policies.

DOE G 424.1-1



Background

Requirements for USQs are detailed in Title 10, *Code of Federal Regulations* (CFR) Part 830.203, “Unreviewed Safety Question Process.” They are as follows.

1. The contractor responsible for a hazard category 1, 2, or 3 DOE nuclear facility (hereafter referred to as contractor) must establish, implement, and take actions consistent with a USQ process that meets DOE requirements.
2. The contractor must implement the DOE approved USQ procedure when there is (a) temporary or permanent change in the facility, procedures, (b) test or experiment not described in the Documented Safety Analysis (DSA), or (c) a potential inadequacy of the DSA.
3. The contractor must obtain DOE approval prior to taking any action addressing any of the conditions in requirement 2 above.

DOE G 424.1-1, *Implementation Guide for Use in Addressing Unreviewed Safety Question Requirements*, provides information to assist in implementation and interpretation of the Rule.

The existence of a USQ does not mean that the facility or the operation is unsafe. However, when a change is proposed or a condition is discovered that could increase the risk of operating a facility beyond what was established in the current safety basis, a potential USQ exists. The contractor then must prepare a USQD report. If the existence of USQ is confirmed, the contractor must submit the USQD report to the local DOE office, which reviews it for acceptability prior to issuing the approval, following which the safety basis document must be revised by the contractor.

USQD Document

An **Unreviewed Safety Question Determination (USQD)** document contains the review of a change or a situation where there is reason to believe that the facility’s existing safety analysis may be in error or is otherwise inadequate. It records the scope of the determination and an explanation of the technical basis for the conclusions reached.

DOE G 424.1-1



Background (continued)

If more USQs are identified at one facility than at another, it does not indicate that the risk from operating that facility or site is greater. In fact, identifying a USQ that originates from a PISA provides an opportunity to correct past errors and indicates thoroughness in assessing the planned changes.

DOE M 231.1-2, *Occurrence Reporting and Processing of Operations Information*, requires that any USQ originating from a PISA must be reported to the Department's Occurrence Reporting and Processing System (ORPS). The EH-23 USQ Activity Report is based on a review of USQ information available in the ORPS database. Any USQ that is not reportable to ORPS (as defined in DOE M 231.1-2) is outside the scope of this report. This is not a limitation because the purpose of this report is to document required improvements to existing safety basis documents.

PISA

A **Potentially Inadequate Safety Analysis (PISA)** exists if the original analysis that supported the DOE-approved safety basis is not bounding or may be otherwise inadequate or inappropriate. The intent is to ensure that operations are conducted in a safe manner consistent with the safety basis. A PISA may result from (1) a discrepant as-found condition, (2) an operational event or incident, or (3) new information, including discovery of an error. The main consideration is that the analysis does not match the current physical configuration of the facility, or the analysis is inappropriate or contains errors.

DOE G 424.1-1

If a contractor responsible for a hazard category 1, 2, or 3 DOE nuclear facility discovers or is made aware of a potential inadequacy of the documented safety analysis, it must:

- (1) Take action, as appropriate, to place or maintain the facility in a safe condition until an evaluation of the safety of the situation is completed;
- (2) Notify DOE of the situation;
- (3) Perform a USQ determination and notify DOE promptly of the results; and
- (4) Submit the evaluation of the safety of the situation to DOE prior to removing any operational restrictions initiated.

10 CFR 830.203



Report Preparation

The EH-23 USQ Review Team searches the ORPS database, collects USQ data, and enters all critical items from the ORPS report in a table (Appendix A) that is prepared for each USQ. The team then assesses the completeness of the ORPS report and makes related observations. A list of positive, currently open USQs and any actions taken is maintained until the final ORPS reports are issued (Appendix B). The team determines the cause of each USQ (as related to the safety basis documents) using the codes shown in Table 1 (see Appendix C for details) and presents the information in a graphical format (Figures 2, 3a, and 3b). Contact with site personnel and site visits are made, as necessary, to obtain additional information and to validate the contents of the report.

Table 1
Definitions of Cause Codes*

Cause Code Description	Cause Code ID
Nonexistent Safety Document	A1
Unanalyzed Material Inventory	A2
Unanalyzed Material Properties	A3
Unaddressed Mission Change	A4
Unassessed Equipment Change	A5
Inadequate Safety System	A6
Unanalyzed Accident	A7
Lack of Depth/Details in Accident Scenario	B1
Inadequate or Flawed DSA Analysis	B2
Safety Program Deficiencies	B3
Equipment Malfunction/Failure	B4
Misapplication of DOE Standards	B5
Incorrect Accident Analysis	B6
Inadequacy of Controls	B7

* For more details, see Appendix C.



Summary of Results

Highlights of the positive USQDs reported from April 1, 2005, to June 30, 2005, are described below.

Albuquerque Operations — 4 Positive USQDs The DSA Analyses were inadequate to support field conditions (ALO-AO-BWXP-Pantex-2005-0044, ALO-AO-BWXP-Pantex-2005-0057, and ALO-LA-LANL-CMR-2005-0002) or the controls were found to be inadequate (ALO-AO-BWXP-PANTEX-2005-0047).

Idaho Operations — 2 Positive USQDs Safety Program Deficiencies related to uranium inventory control (ID-CWI-LANDLORD-2005-0003) and Radioactive Waste Transportation (ID-BEA-TSD-2005-0002) were identified.

Oak Ridge Operations — 7 Positive USQDs A variety of situations were discovered at the site. These consisted of: Unanalyzed Material Inventories (ORO--BJC-K25ENVRES-2005-0009 and ORO--BJC-Y12WASTE-2005-0002), Equipment Malfunctions (ORO--BJC-K25ENVRES-2005-0008), Inadequate Analyses (ORO--BJC-K25 ENVRES-2005-0014), (ORYS-YSO-BWXT-Y12NUCLEAR-2005-0011), and Misapplication of DOE Standards (ORO--ORNL-X10BOPLANT-2005-0003).

Richland Hanford Site — 3 Positive USQDs Flawed DSA Analyses (RL-PHMC-327FAC-2005-0001, RL--PHMC-GENSERVICE-2005-0001) and an equipment malfunction (RL-PHMC-PFP-2005-0012) were identified.

Rocky Flats — 1 Positive USQD Unanalyzed material inventory was found in Tank T231B, scheduled for demolition (RFO--KHLL-D&DOPS-2005-0009).

Savannah River Site — 1 Positive USQD The fire and explosion hazards in Defense Waste Processing Facility were found to be inadequately addressed (SR--WXRC-WVIT-2005-0003).

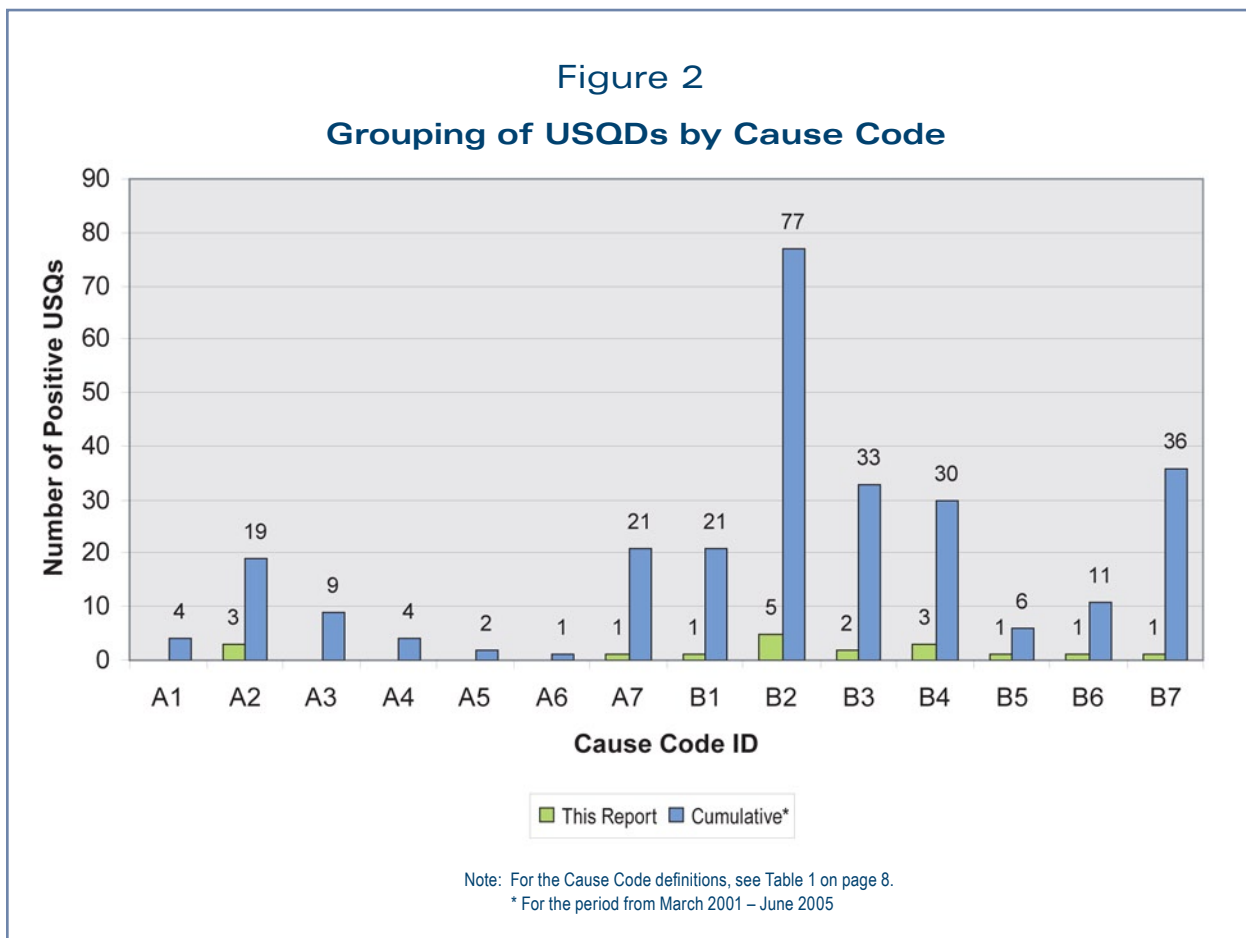
Dominant Causes

Of the 18 USQDs identified in this reporting period, the main causes were inadequate safety analyses, unanalyzed material inventories, and equipment malfunction.



Results

From April through June 2005, there were 18 positive USQDs across the DOE Complex. The results of the team’s review of the USQDs are discussed below. Specific details for each USQ (in tabular form) are provided in Appendix A. Figure 2 shows USQs reported for this period and the cumulative period from March 2001 through June 2005, grouped by the cause codes defined in Table 1 (page 8). Figure 3a shows the percentages of USQs by cause code for the period of April through June 2005, and Figure 3b shows the percentages of USQs by cause code for the cumulative period of March 2001 through June 2005.



Results (continued)

Figure 3a
Percentages of USQs by Cause Code
(This Period)

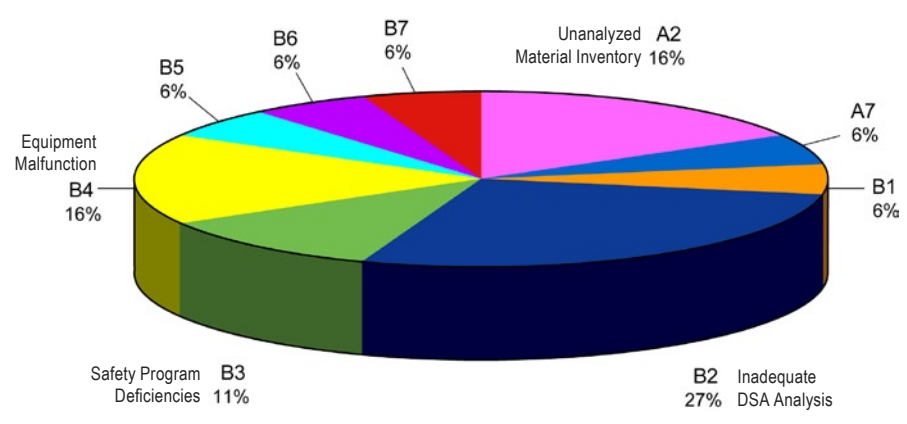
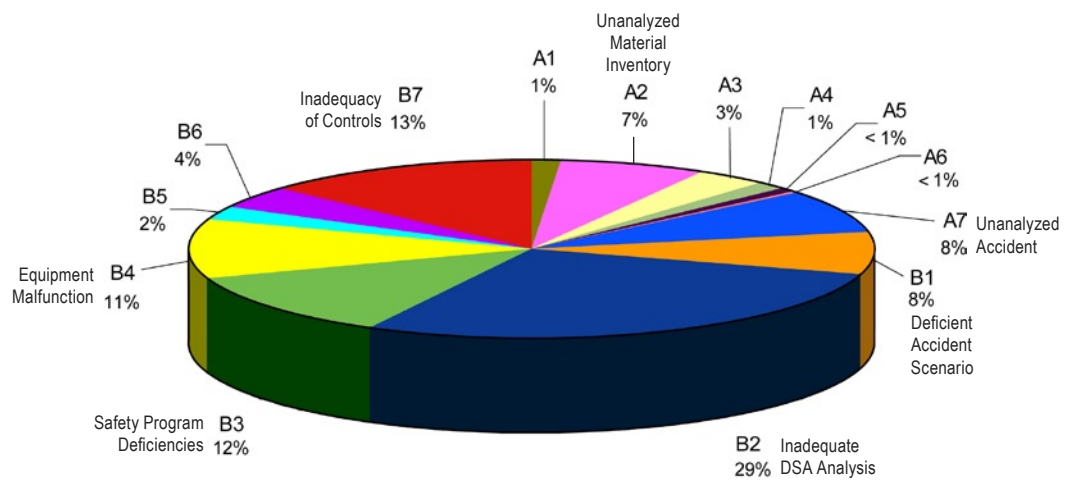


Figure 3b
Percentages of USQs by Cause Code
(Cumulative*)



Note: For the Cause Code definitions, see Table 1 on page 8.
 * For the period from March 2001 – June 2005



Results for the Current Period

Albuquerque Operations — 4 Positive USQDs

Albuquerque Operations identified the following positive USQDs.

- 1 PISA/Positive USQ on separated connector cover. (ALO-AO-BWXP-PANTEX-2005-0044)
Cause: Flawed DSA Analysis
- 2 Unexpected application of pressure over procedural limit. (ALO-AO-BWXP-PANTEX-2005-0047)
Cause: Inadequacy of Controls
- 3 Positive USQ, SS-21 development; 150-psi control on the Phoenix cart. (ALO-AO-BWXP-PANTEX-2005-0057) *Cause: Flawed DSA Analysis*
- 4 Unreviewed consequences of dropping a heavy load in Wing 9 of CMR determined to be positive USQD. (ALO-LA-LANL-CMR-2005-0002) *Cause: Flawed DSA Analysis*

Currently Open USQs

- ALO-LA-LANL-LANL-2004-0007 (April 2004), Inadequate Documented Safety Analysis Concerning Type A Designated Packaging used for Fissile Content
- ALO-LA-LANL-TA55-2004-0009 (September 2004), Modification to TA-55 Fire Detection System Results in Positive Unreviewed Safety Question
- ALO-AO-BWXP-PANTEX-2005-0044 (April 2005), PISA/Positive USQ on Separated Connector Cover
- ALO-AO-BWXP-PANTEX-2005-0047 (April 2005), Unexpected Application of Pressure Over Procedural Limit, Final Issue
- ALO-AO-BWXP-PANTEX-2005-0057 (May 2005), Positive USQ, SS-21 Development; 150-psi Control on the Phoenix Cart
- ALO-LA-LANL-CMR-2005-0002 (June 2005), Unreviewed Consequences of Dropping a Heavy Load in Wing 9 of CMR Determined to be Positive USQD



Results for the Current Period (continued)

Idaho Operations — 2 Positive USQDs

Idaho Operations identified the following positive USQDs.

- 1 The inventory of uranium was increased beyond what was assumed in the SAR due to the demolition of CPP-637, experimental facilities. (ID-CWI-LANDLORD-2005-0003) *Cause: Safety Program Deficiencies*
- 2 The transfer of EBR-II experimental fuel from the Radioactive Scrap and Waste Facility was not considered by the Transportation Safety Document. (ID-BEA-TSD-2005-0002) *Cause: Safety Program Deficiencies*

The completion of ongoing corrective actions will have to be followed separately.

Currently Open USQs

- ID-BBWI-ATR-2004-0004 (March 2004), Core Feedback During Loss of Commercial Power, Update August 18, 2005.
- ID-BBWI-FUELCSTR-2004-0002 (August 2004), Potential Inadequacy in Safety Analysis, FAST TRIGA Fuel Storage, Final Issued, December 18, 2004.
- ID-BBWI-FUELCSTR-2004-0003 (September 2004), PISA for ATR Fuel Unloading Bucket and Stand, Final Issued, December 16, 2004.
- ID-BNFL-AMWTF-2004-0024 (October 2004), Positive USQ Reveals Inadequacy in the Documented Safety Analysis, Notification, Final Issued June 21, 2005.
- ID--BBWI-FUELCSTR-2005-0001 (January 2005), Potential Inadequacy in Safety Analysis, Cask Centering Device's Low Temperature Brittle Failure not Considered, Update.
- ID--BEA-TMF-2005-0001 (February 2005), The Exclusion of Some Fissionable Materials in the Vault Storage from Total Material at Risk, Update.
- ID--BEA-TSD-2005-0002 (April 2005), Determination of Positive USQ Relative to the Hazard Analysis of the MFC Transportation Safety Document, Final Issued.
- ID--CWI-LANDLORD-2005-0003 (June 2005), Positive PISA Screen for CPP-602 Laboratory, Update July 19, 2005.



Results for the Current Period (continued)

Oakland Operations — No USQs this period

Currently Open USQs

- OAK--LLNL-LLNL-2004-0053 (October 2004), Potential Inadequacy in the Building 332 Safety Analysis
- OAK--LLNL-LLNL-2004-0056 (October 2004), Potential Inadequacy in the Building 332 Safety Analysis

Oak Ridge Operations — 7 positive USQDs

Oak Ridge Operations identified the following USQDs.

- 1 The preliminary non-destructive analysis (NDA) data indicate that the containers contain fissile material in excess of the BJC-NS-1003, Revision 7, exempt limits. This is a positive USQD due to Potentially Inadequate Safety Analysis. (ORO--BJC-K25ENVRES-2005-0009, Final) *Cause: Unanalyzed Material Inventory*
- 2 The detector coverage for the Radiation Criticality Accident Alarm System (RCAAS) detector, Cluster 43, was in a location different than that shown in the SAR. This safety system was not serving its function in Building K-25, a Category 2 facility. (ORO--BJC-K25ENVRES-2005-0013, Final) *Cause: Equipment Malfunction/Failure*
- 3 The K-25 and K-27 buildings are Category 2 Nuclear Facilities, and their residual lube oil inventory in tanks and pumps is estimated to be about 100 gallons in the safety analysis; the actual inventory is about 300 gallons according to recent estimates. (ORO--BJC-K25ENVRES-2005-0014, Final) *Cause: Incorrect Accident Analysis*
- 4 After a review of the current operating requirements and controls, it has been determined that categorization of WETF as a Category 3 facility results in a USQD because current inventory exceeds the Category 3 limits. (ORO--BJC-Y12WASTE-2005-0002, Final) *Cause: Unanalyzed Material Inventory*
- 5 Performance Analysis Identifies Deficiencies in Facility Hazard Categorization as a Recurring Event. Three facilities are identified with erroneous facility hazard categorization. (ORO--ORNL-X10BOPLANT-2005-0003, Final) *Cause: Misapplication of DOE Standards*
- 6 A failure mode of the hydrogen fluoride piping was discovered that had not been analyzed in the Basis for Interim Operations (BIO). (ORYS-YSO-BWXT-Y12NUCLEAR-2005-0011, Update) *Cause: Lack of Depth/Details in Accident Analysis*
- 7 Hoisting and Rigging activities associated with the demolition of 9206, Room 20, have resulted in this USQD. (ORYS-YSO-BWXT-Y12SITE-2005-000, Final) *Cause: Equipment Malfunction/Failure*

The completion of ongoing corrective actions will have to be followed separately.



Results for the Current Period (continued)

Oak Ridge Operations (continued)

Currently Open USQs

- ORO--ORNL-X10HFIR-2004-0015 (October 2004), New Information on Check Valve Induced Water Hammer (Positive USQ)
- ORYS-YSO-BWXT-Y12NUCLEAR-2005-0011 (Update, August 24, 2005), HF Piping System Unanalyzed Failure Mode.

Richland Hanford Site — 3 Positive USQDs

Richland Hanford identified the following positive USQDs.

- 1 New information regarding hydrogen generation precludes removing out-of- service ion exchange columns. (RL-PHMC-327FAC-2005-0001) *Cause: Flawed DSA Analysis/Unanalyzed Accident*
- 2 Exhaust damper occasionally stuck open was not considered in accident analysis. (RL-PHMC-PFP-2005-0012) *Cause: Equipment Malfunction*
- 3 There was an error in the estimation of radioactive inventory of a shipping container (RL--PHMC-GENSERVCE-2005-0001) *Cause: Inadequate DA Analysis*

Currently Open USQs

- None.

Rocky Flats — 1 Positive USQD

Rocky Flats identified the following positive USQD.

- 1 Sample results of Tank T231B Sludge exceed hazard category criteria resulting in a USQ. This tank is being prepared for demolition and sludge removal, which will be done under a DOE-approved JCO. (RFO--KHLL-D&DOPS-2005-0009, Final) *Cause: Unanalyzed Material Inventory*

Currently Open USQs

- None.



Results for the Current Period (continued)

Savannah River Site — 1 Positive USQD

Savannah River Site identified the following positive USQD.

- 1 The fire and explosion hazards at Defense Waste Processing Processing Facility were inadequately addressed. (SR--WXRC-WVIT-2005-0003) *Cause: Safety Program Deficiencies*

Currently Open USQ

- SR--WSRC-CLAB-2005-0002 (Update May 5, 2005), Lid Ejection Accident due to Deflagration in Repackaged Drums Inadequately Analyzed Worker Consequences



Glossary

Code of Federal Regulations (CFR) The codification of the general and permanent rules published in the *Federal Register* by the executive departments and agencies of the Federal Government. The Code is divided into 50 titles that represent broad areas subject to Federal regulation. Title 10 is *Energy*, and 10 CFR 830 contains rules for nuclear safety management.

Documented Safety Analysis (DSA) Analysis that defines the extent to which a nuclear facility can be operated while ensuring the safety of workers, the public, and the environment. The document includes a description of conditions, boundaries of operations, and hazard controls.

Occurrence Reporting and Processing System (ORPS) A database used to document daily operational occurrences at all DOE sites.

Potentially Inadequate Safety Analysis (PISA) A condition that exists if the original analysis that supported the DOE-approved safety basis is not bounding or may be otherwise inadequate or inappropriate. A PISA may result from a discrepant as-found condition, an operational event or incident, or new information, including discovery or error. The main consideration is that the analysis does not match the current physical configuration of the facility, is inappropriate, or contains errors. The intent is to ensure that operations are conducted in a safe manner consistent with the approved safety basis.

Safety Basis Documented safety analysis and hazard controls that provide reasonable assurance that a DOE nuclear facility can be operated in a manner that adequately protects workers, the public, and the environment. Safety Basis is a subset of **Authorization Basis** in that the Authorization Basis may include corporate operational and environmental requirements.

Unreviewed Safety Question (USQ) means a situation where (1) the probability of the occurrence or the consequences of an accident or the malfunction of equipment important to safety previously evaluated in the documented safety analysis could be increased; (2) the possibility of an accident or malfunction of a different type than any evaluated previously in the documented safety analysis could be created; (3) a margin of safety could be reduced; or (4) the documented safety analysis may not be bounding or may be otherwise inadequate.

USQ Determination (USQD) Document A USQ Determination document contains the review of a change or situation where there is reason to believe that the facility's existing safety analysis may be in error or is otherwise inadequate. The Code of Federal Regulations requires that USQ evaluations be documented, including recording the scope of the determination and the technical basis for concluding that an unreviewed safety question does, indeed, exist.



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Appendix A

Summary Descriptions of USQs
for the Reporting Period

ORPS ID Status	ALO-LA-LANL-CMR-2005-0002 Update	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	B2.ii
Title	Unreviewed Consequences of Dropping a Heavy Load in Wing 9 of CMR Determined to be Positive USQD			Date and Time Discovered		06/08/2005 10:00 (MTZ)			
Site/Facility	Los Alamos National Laboratory/Chemistry & Metallurgy Research			DOE Secretarial Office		NNSA - National Nuclear Security Administration			
Facility Manager Phone	Paul Sasa (505) 667-3537			Local DOE Contact Phone		None Not Available			
Originator Phone	Mark W. Hunsinger (505) 665-1496			Contractor		Los Alamos National Laboratory			
Description:									
<p>On June 8, 2005, at Technical Area 3, Building 29, the Nuclear Materials Technology Authorization Basis Group notified the Chemistry and Metallurgy Research Building Operations Manager and NNSA Facility Representative that a potential inadequacy of the documented safety analysis (PISA) had been identified. The PISA was the estimate of the consequences of dropping a heavy load in Wing 0. The original design of Wing 9 included a 25 ton crane for lifting heavy loads. Wing 9 has several operations which require the lifting of heavy loads up to approximately 20 tons. During a walkthrough in May 2005, it was noted that there are several items in Wing 9 that are lifted as part of normal operations which can be heavier than the design considerations for Wing 9. Consequently a USQD was initiated and the results indicated a positive USQ.</p>									
Contractor Action:							Safety Basis Document Corrective Actions (CA):		
<p>Unless specific calculations can be performed for normal transfer operations, it is assumed that these transfers could result in floor failure, supporting column failure, and the potential collapse of the floor structure. Compensatory measures include analysis of lifts (load weights and drop heights) which can be performed.</p>							<p>None specified.</p>		
DOE Field Office Action:							All CA Status:		
<p>Not provided.</p>							<p>Not applicable.</p>		
EH-23 Assessment: Corrective actions will be reviewed when available. Cause: Flawed DSA analysis.									

ORPS ID Status	ALO-AO-BWXP-PANTEX-2005-0044 Update	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	B2.xi
Title	PISA/Positive USQ on Separated Connector Cover			Date and Time Discovered		04/19/2005 07:33 (CZT)			
Site/Facility	Pantex Plant/Balance-of-plant - Machine shops			DOE Secretarial Office		NNSA - National Nuclear Security Administration			
Facility Manager Phone	Kathleen Rogers (806) 777-6803			Local DOE Contact Phone		Brent Henderson Not Available			
Originator Phone	Glen A. Mitchell (806) 477-4953			Contractor		BWXT Pantex			
<p>Description: While performing an authorized black-out procedure step to enable a piece part to be removed, a connector cover separated. This separation created a unique configuration not analyzed and documented in the AB. This Potentially Inadequate Safety Analysis (PISA) was identified and entered into ORPS.</p> <p>The resulting USQ evaluation was positive, indicating the hazards analysis was not contained in the AB documents as required and must be performed and documented.</p>									
<p>Contractor Action: Operations were suspended for this specific assembly in this specific facility. The process engineer was present during the operation. The Production Section Manager (PSM) was contacted. Nuclear Explosive Safety was contacted. Under process Engineering direction, the unit was placed in a safe and stable configuration by installing protective covers.</p>						<p>Safety Basis Document Corrective Actions (CA): Generate ED05-166 to enable process recovery. Process Engineering- 0920 - Judy Anglin.</p> <p>Target Completion Date: 05/13/2005 Completion Date: 05/13/2005</p>			
<p>DOE Field Office Action: Carlos R. Alvarado noted that " this report cannot be approved due to several deficiencies in the report and need correction before it can go further." He also noted that CAs are deficient.</p>						<p>All CA Status: Completed. See DOE Field Office Actions.</p>			
<p>EH-23 Assessment: Cause of the event is inadequate or flawed analysis.</p>									

ORPS ID Status	ALO-AO-BWXP-PANTEX-2005-0047 Update	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	B7.viii
Title	Unexpected Application of Pressure Over Procedural Limit			Date and Time Discovered		04/26/2005 10:40 (CZT)			
Site/Facility	Pantex Plant/Balance-of-plant - Offices			DOE Secretarial Office		NNSA - National Nuclear Security Administration			
Facility Manager Phone	Larry Eppler (806) 477-6477			Local DOE Contact Phone		Earl F. Burkholder Not Available			
Originator Phone	Glen A. Mitchell (806) 477-4953			Contractor		BWXT PANTEX			
<p>Description: On 4/26/2005 at approximately 1040 hours, a pressure reading 350 pounds-force (lbf) over procedure limit was observed. The reading was reached during a second attempt at removing a Midcase from an assembly by breaking a bond. No injuries, or damage to product, equipment or facility occurred.</p> <p>The procedure (Nuclear Explosive Engineering Procedure, NEEP) was silent on the use of additional turns to increase force to the allowed maximum when the tool's clutch disengaged prior to reaching the maximum force allowed. The procedure contained no tolerance to the pressure value, just the pressure to be reached. The positive USQ was caused when a procedural step (quick quarter turns versus the slower, more smooth turns normally used) was conducted in a manner not foreseen in the process design phase. Therefore, it was not analyzed for hazards, nor were controls developed.</p>									
<p>Contractor Action: The pressure was reduced to procedure limit, then to zero to place in safe and stable condition. Notifications were made. A critique was held.</p>						<p>Safety Basis Document Corrective Actions (CA): Six corrective actions were developed, all of which were completed by 8/10/05.</p>			
<p>DOE Field Office Action: Reviewed the USQ report to ensure that a complete investigation has been conducted and that appropriate corrective actions have been implemented.</p>						<p>All CA Status: Complete.</p>			
<p>EH-23 Assessment: No action needed. Cause of USQ: Inadequacy of controls.</p>									

ORPS ID Status	ALO-AO-BWXP-PANTEX-2005-0057 Update	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	B2.viii
Title	Positive USQ, SS-21 Development; 150 psi Control on the Phoenix Cart			Date and Time Discovered		05/18/2005 11:04 (CTZ)			
Site/Facility	PantexPlant/Balance of Plant - Infrastructure			DOE Secretarial Office		NNSA - National Nuclear Security Administration			
Facility Manager Phone	Richard Durante (866) 477-6735			Local DOE Contact Phone		None Not Available			
Originator Phone	Glen A. Mitchell (806) 477-4953			Contractor		BWXT PANTEX			
Description: During a Design Requirements Document (DRD) review, plant personnel identified a positive USQ regarding the Phoenix Cart. This specific program (SS-21) is under development and will use the cart for gas sampling. The cart will be connected to the facility's compressed air system. The current DRD Accident Analysis does not qualify the cart to withstand a maximum inlet pressure of 150 psi without resulting in fragmentation, as required.									
Contractor Action: Suspended starting operations using the Phoenix Cart for this SS-21 start-up program's production operations only.							Safety Basis Document Corrective Actions (CA): None specified.		
DOE Field Office Action: Not provided.							All CA Status: Not applicable.		
EH-23 Assessment: Needs to develop corrective actions. Cause: Flawed DSA analysis.									

ORPS ID Status	ID--CWI-LANDLORD-2005-0003 Update	Reporting Criteria	3B(1)	Category	2	ES&H Impact	Potential exists	USQ Cause Code	B3.iii
Title	Positive PISA Screen For CPP-602 Laboratory			Date and Time Discovered		06/27/2005 08:20 (MTZ)			
Site/Facility	Idaho National Engineering Lab. /ICPP Landlord Activities			DOE Secretarial Office		EM - Environmental Management			
Facility Manager Phone	Ken N. Brewer (208) 526-3018			Local DOE Contact Phone		Karl Hugo Not Available			
Originator Phone	Stacey B. Schmier (208) 526-3100			Contractor		CH2M*WG Idaho, LLC			
Description:									
<p>On Tuesday, June 21, 2005, a positive PISA screen (USQ-2313) was received for SAR/TSR-121. The screen was for an increased uranium inventory in the CPP-602 facility. The CPP-602 uranium inventory had increased in June 2004, to support deactivation and demolition of CPP-637, Experimental Facilities. The revised SAR and TSRs were submitted to the Independent Review Committee (IRC) at the end of April 05. At this time, a draft review copy was also given to the DOE-ID reviewer for an informal review prior to submittal to DOE-ID. The DOE reviewer commented that the toxicological effects of the 8 kgs of uranium transferred from CPP-651 should be addressed in the accident analysis, that the material at risk assumptions in the accident analysis for plutonium and uranium should be addressed by TSRs, and that DOE-STD-1186, Specific Administrative Controls, was not correctly implemented. During the facility review of these changes, the facility manager checked the actual facility inventory against the TSR limit of 62 kg and discovered that the laboratory facilities actually contained about 154 kg of uranium counting the material transferred from CPP-637 and that a PISA could exist in the implemented SAR because this additional uranium inventory could result in significantly higher toxicological consequences than analyzed by the SAR.</p> <p>On 7/19/2005, ORPS report ID-CWI-LANDLORD-2005-0003 was upgraded from Significance Category 3 to Significance Category 2, Group 3B(1) 2. The event was determined to be PAAA reportable on 7/12/2005. Compensatory measures remain in place.</p>									
Contractor Action:							Safety Basis Document Corrective Actions (CA):		
<ol style="list-style-type: none"> 1. Management notifications were completed. 2. Compensatory measures were put into place for the CPP-602 laboratory. 							<ol style="list-style-type: none"> 1. Submit revised SAR-121 to DOE-ID for annual review, incorporating PISA revisions and clearly tracing identification of uranium toxicity through all appropriate sections of chapter 3 and chapter 5. Target Completion Date: 01/31/2006 Tracking ID: DR 38537, AI 37120 2. Provide training for ALD technical staff addressing MAR/accident analysis concepts for hazardous materials, with emphasis on uranium toxicity (to be included in SAR-121 annual tech staff training). 		
DOE Field Office Action:							All CA Status:		
Not specified. However, HQ Summary exists. Important compensatory measures should be described in the ORPS Report to allay safety concerns.							To be followed.		
EH-23 Assessment: Cause: Safety Program Deficiencies. The weak areas in the USQD process at the site have been identified. However, the corrective actions should be implemented for all other facilities at the site.									
ORPS ID Status	ID--BEA-TSD-2005-0002 Final	Reporting Criteria	3B(1)	Category	2	ES&H Impact	Potential existed	USQ Cause Code	B3.iii

Title	Determination of Positive USQ Relative to the Hazard Analysis of the MFC Transportation Safety Doc	Date and Time Discovered	04/04/2005 11:30 (MTZ)
Site/Facility	Idaho National Laboratory / Treatment Storage and Disposal	DOE Secretarial Office	NE - Nuclear Energy, Science and Technology
Facility Manager Phone	BATTEN, RICHARD L (208) 533-7654	Local DOE Contact Phone	M. Haben DOE-ID Not available
Originator Phone	FLATTEN, LOREN R (208) 533-7680	Contractor	Bechtel BWXT Idaho, LLC.
<p>Description: As reported in occurrence report ID-BEA-TSD-2005-0001, on March 17, 2005 a transfer of EBR-II experimental fuel from Radioactive Scrap and Waste Facility (RSWF) to Hot Fuel Examination Facility (HFEF) was performed. The transfer involved fuel materials and a shipping configuration not specifically listed in the Materials and Fuels Complex (MFC) Transportation Safety Document (TSD).</p> <p>A USQ safety evaluation was performed on the MFC TSD and concluded that, "the condition of the TSD constitutes a positive USQ in that the probability of an accident previously evaluated in the safety basis may be increased."</p>			
<p>Contractor Action: Inter-facility transfers controlled by the TSD (i.e., non-DOT transfers or transfers involving greater than Hazard Category III quantities) are suspended pending further corrective actions.</p>		<p>SBD Corrective Actions (CA): 1. Develop and transmit to the Department of Energy-Idaho Operations Office a work plan for upgrade of Materials and Fuels Complex Nuclear Safety Basis Documents. Target Completion Date: 05/02/2005 Tracking ID: 2005-0018 2. Implement the TSR-Level Administration Controls identified in the ESS. Target Completion Date: 08/15/2005 Tracking ID: 2005-0029</p>	
<p>DOE Field Office Action: DOE Facility Representative Input: The corrective actions taken have adequately addressed the identified concerns with the MFC TSD. Entered by: HABEN, MICHAEL R Date: 06/30/2005</p>		<p>All CA Status: Unverifiable</p>	
<p>EH-23 Assessment: Cause: Safety Program Deficiencies. There is inadequate specification of ES&H impact. Even though an HQ Summary exists, one can not infer if the potential hazards had been adequately addressed.</p>			

ORPS ID Status	ORO--BJC-K25ENVRES-2005-0009 Final	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	A2
Title	Potentially Inadequate Safety Analysis, Storage Yard			Date and Time Discovered		004/18/2005 12:19 (ETZ)			
Site/Facility	East Tennessee Technology Park, Facility D&D/K-25/K-27 Project			DOE Secretarial Office		EM - Environmental Management			
Facility Manager Phone	J. Q. Hicks (865) 576-8905			Local DOE Contact Phone		Donna Perez Not Available			
Originator Phone	Norma J. Kwaak (865) 574-3282			Contractor		Bechtel Jacobs Company, LLC			
Description: On Thursday, April 14, 2005, DOE directed Bechtel Jacobs Company, LLC, via letter, to provide technical support to the Department of Energy to facilitate the disposition of containers that contain waste material. The preliminary non-destructive analysis (NDA) data indicates that the containers contain fissile material in excess of the BJC-NS-1003, Rev. 7 exempt limits. No adverse environmental, safety, or health impacts resulted from this occurrence.									
Contractor Action: Compensatory measures were established to address the operational concern. Those measures were as follows: (1) Appropriate controls were installed. (2) A Nuclear Criticality Safety (NCS) Anomalous Condition Report (ACR) was issued on April 13, 2005, and the location of the containers was subsequently posted.						Safety Basis Document Corrective Actions (CA): Ensure one container undergoes any necessary sorting and segregation processes and the resulting material is placed into compliant storage until final disposition. Target Completion Date: 07/15/2005			
DOE Field Office Action: None.						All CA Status: Action completed.			
EH-23 Assessment: Cause: Unanalyzed Material Inventory									

ORPS ID Status	ORO--BJC-K25ENVRES-2005-0013 Final	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	B4.iv
Title	Declaration of a Potential Inadequacy of the Document Safety Analysis (PISA)-Inadequate RCAAS Cove			Date and Time Discovered		05/31/2005 12:20 (ETZ)			
Site/Facility	East Tennessee Technology Park, Facility D&D/K-25/K-27 Project			DOE Secretarial Office		EM - Environmental Management			
Facility Manager Phone	G. Eidam (865) 576-3393			Local DOE Contact Phone		Donna Perez Not Available			
Originator Phone	Norma J. Kwaak (865) 574-3282			Contractor		Bechtel Jacobs Company, LLC			
Description: During a K-25 Building walkdown for update of documents showing the areas of detector coverage for the Radiation Criticality Accident Alarm System (RCAAS) and the associated immediate evacuation zone (IEZ), a Criticality Safety Officer observed that RCAAS detector Cluster 43 was in a location different than shown on the historical documents. The location of the Cluster has never been changed from its original location (i.e., historical condition). Subsequently, a Shielding Analyst determined that based upon the actual location of Cluster 43, a portion of the K-25 Building Vaults (basement) K-305-3 and K-305-4 has a possibility of not having adequate detection capabilities for the minimum criticality accident of concerns.									
Contractor Action: Limiting Condition for Operation (LCO) 3.1.1, Criticality Accident Alarm System Condition A for loss of detection capability was entered and Restricted Access for the affected area was established. Fissile material handling for the affected area remains suspended. This places the affected area in a safe condition.						Safety Basis Document Corrective Actions (CA): 1. Revise Nuclear Criticality Safety Evaluation NCSR-ET-K25-0041, Basis for the K-25 Immediate Evacuation Zone, to address areas of the K25 Facility that were determined to not have adequate RCAAS detection coverage. 2. Revise TSR and submit to DOE for approval. 3. Review this issue with RCAAS Configuration Control Board personnel stressing. Complete 8/16/05			
DOE Field Office Action: None.						All CA Status: Action completed.			
EH-23 Assessment: Cause: Equipment Malfunction/Failure									

ORPS ID Status	ORO--BJC-K25ENVRES-2005-0014 Final	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	B6i(b)
Title	Potentially Inadequate Lube Oil Inventory Assumption in K25 and K27 Buildings DSA			Date and Time Discovered		06/07/2005 10:20 (ETZ)			
Site/Facility	East Tennessee Technology Park, Facility D&D/K-25/K-27 Project			DOE Secretarial Office		EM - Environmental Management			
Facility Manager Phone	G. Eidam (865) 576-3393			Local DOE Contact Phone		Dan Emch Not Available			
Originator Phone	James K. Pemberton (865) 574-3282			Contractor		Bechtel Jacobs Company, LLC			
<p>Description: The Documented Safety Analysis for the K-25 and K-27 Facilities at the East Tennessee Technology Park, Oak Ridge, Tennessee, DSA-ET-K-25/K-27-0001, Rev. 3 provides descriptive and volumetric information related to the process lubrication systems for the facilities. The document states that residual quantities of lube oil remain in the tanks and pumps within the buildings. The Fire Hazard Analysis for documents for K-27 (BJC/OR-1184) and K-25 (BJC/OR-1185) state that approximately 900 gallons of lube oil remain in K-27 and 5530 gallons of lube oil remain in K-25. This equates to approximately 100 gallons or 3 to 7.5% of total building capacity per unit. Project activities associated with completing the removal of the lubricating oil indicate that the original volume estimates were not conservative and that more oil will be found in the facility components.</p> <p>Preliminary estimates project the system may contain as much as 300 gallons per unit.</p> <p>NOTE: The K-25 & K-27 Buildings are Category 2 Nuclear Facilities.</p>									
<p>Contractor Action: Reviewed scheduled activities associated with draining the lube oil system and verified that no hotwork is scheduled in the work area. Initiated efforts to revise the estimated quantities of lubricating oil based on current drainage volume. The Project Review Committee met and reviewed the current information and determined that the procedural controls in Project procedure KD-1004 are applicable. In addition, the following compensatory measures are to be put in place prior to resuming removal of the lubricating oil. No hotwork in vaults where drums are stored. No forklift or vehicle activities (except those related to Vent, Purge, and Drain activities) within 50 feet of the drums in storage. No drum storage within 50 feet of material at risk (MAR). No equipment refueling within 50 feet of the oil drum storage. Only propane/electric forklifts are to be used to move the drums of oil.</p>						<p>Safety Basis Document Corrective Actions (CA): The USQ did not find an issue associated with the additional lube oil inventory. There was a procedural non-compliance (failure to comply 50 feet spacing of KD-1004) that resulted in accumulation of material in an unanalyzed configuration. The configuration resulted in an unreviewed safety question. The compensatory measures are to remain in place until the oil is removed from the facility or the DSA & TSR are revised (to include the controls) and implemented. Final 8/13/05</p>			
<p>DOE Field Office Action: None.</p>						<p>All CA Status: Action completed.</p>			
<p>EH-23 Assessment: Cause: Incorrect Accident Analysis</p>									

ORPS ID Status	ORO--ORNL-X10BOPLANT-2005-0003 Final	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	B5
Title	Performance Analysis Identifies Deficiencies in Facility Hazard Categorization as a Recurring Event			Date and Time Discovered		04/08/2005 11:00 (ETZ)			
Site/Facility	Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)			DOE Secretarial Office		EM - Environmental Management			
Facility Manager Phone	Carol H. Scott (865) 574-7140			Local DOE Contact Phone		Steve Abercrombie Not Available			
Originator Phone	Elaine M. Patterson (865) 576-4645			Contractor		Oak Ridge National Laboratory			
Description: The quarterly performance report for the first quarter of FY2005 has been completed and was approved for issuance on 4/1/2005. As a result, a determination was made on 4/8/2005 to issue an "R", Recurring Occurrence Report, pertaining to the facility hazard categorization process. This process was previously identified as having programmatic deficiencies (see "Immediate Actions Taken Below") and is being reported separately now, following the completion of the occurrence reporting performance process, in compliance with the requirements of DOE M 231.1-2.									
Contractor Action: Update: 05/26/2005 The third party independent review that was performed as part of CA #4 was documented in a formal report that was issued on April 29, 2005. Ten facilities were identified with potential issues that will need to be resolved to confirm their status as Radiological Facilities. The review identified that seven of the ten facilities lacked sufficient process history or characterization data on potential legacy radioactive material hold-up in inactive hot drains. Four facilities also possess sealed radioactive sources that require further QA review and documentation before the sources could be excluded from radioactive material inventories. In addition to ongoing efforts to obtain further information to confirm these facilities as Radiological Facilities, mitigating and compensatory actions are being taken to ensure safe operations during this interim period of time until final hazard categorization for these facilities is determined.						Safety Basis Document Corrective Actions (CA): Performed an evaluation of the safety of the material in Building 9204-3, along with a justification for interim storage, and submit to DOE for approval. (Actual closure date was 12/15/04.) Conducted a programmatic Root Cause Analysis. (Actual closure date was 2/04/05.) Conduct an independent follow-up assessment of the effectiveness of the ORNL facility hazard categorization process. Final 4/11/05			
DOE Field Office Action: None.						All CA Status: Incomplete.			
<u>EH-23 Assessment:</u> Cause: Misapplication of DOE Standards									

ORPS ID Status	ORYS-YSO-BWXT-Y12NUCLEAR-2005-0011 Update	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	B1
Title	Performance Analysis Identifies Deficiencies in Facility Hazard Categorization as a Recurring Event			Date and Time Discovered	05/03/2005 10:15 (ETZ)				
Site/Facility	Balance of Plant - Infrastructure (Other Functions not specifically listed in this Category)			DOE Secretarial Office	EM - Environmental Management				
Facility Manager Phone	A. Levin (865) 576-5712			Local DOE Contact Phone	N. Blair Not Available				
Originator Phone	Damien R. Bowers (865) 576-1263			Contractor	BWXT Y12				
<p>Description: On May 2, 2005, the 9212 Design Engineering DAR was asked to review the piping for the OCF Hydrogen Fluoride piping in response to a vendor Safety Bulletin and a tag attached to an HF cylinder received on April 14, 2005. The concern regarded pressurization of the HF cylinder during long-term storage and the effect of this pressurization on the process piping.</p> <p>On May 3, 2005, the DAR reviewed the results with the Acting Operations Manager. During this review, a failure mode was discovered that had not been analyzed in the Basis for Interim Operations (BIO).</p> <p>(Note: At no time was the HF cylinder placed into service nor any HF introduced into the system).</p>									
<p>Contractor Action: The Shift Manager placed the use of HF cylinders under administrative control. The following notifications were made:</p> <ul style="list-style-type: none"> - Department Head, Production Facilities - Manager, Manufacturing Division - Acting Manager, Safety Analysis Engineering - Plant Shift Superintendent's Office - Building 9212 NNSA Facility Representative - DNFSB Representative <p>A critique was performed.</p>							<p>Safety Basis Document Corrective Actions (CA): USQD-05-B1W-025-Rev-0 was reported to be positive, therefore this occurrence is being upgraded to Category 2, 3-B-1. On June 6, 2005, BWXT Y-12 issued a Justification for Continued Operations (JCO) to NNSA YSO. A Safety Evaluation Report (SER) was received from YSO on June 14, 2005. Y-12 has evaluated the conditions of the SER and expects to issue a revised Justification for Continued Operations (JCO) to NNSA YSO on June 20, 2005.</p>		
<p>DOE Field Office Action: Reviewing the planned actions.</p>							<p>All CA Status: Corrective action plan being developed.</p>		
<p>EH-23 Assessment: Cause: Lack of Depth/Details in Accident Analysis</p>									

ORPS ID Status	ORYS-YSO-BWXT-Y12SITE-2005-0008 Final	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	B4.ii
Title	Positive Unreviewed Safety Question - Hoisting and Rigging Activities associated with Demolition			Date and Time Discovered		05/12/2005 13:00 (ETZ)			
Site/Facility	Balance of Plant - Infrastructure, Building 9206 Room 20			DOE Secretarial Office		NNSA - National Nuclear Security Administration			
Facility Manager Phone	Joseph Boudreaux (865) 574-3697			Local DOE Contact Phone		Stan Watkins Not Available			
Originator Phone	Damien R. Bowers (865) 576-1263			Contractor		BWXT Y12			
<p>Description: After performing lifting activities associated with the demolition of Building 9206 Room 20, a potential inadequacy in the facility's safety analysis (USQD) was discovered. A protective structure was installed around the wet pipe sprinkler system which implied that a potential hazard was not evaluated in the facility's safety basis.</p> <p>Hoisting and rigging activities were suspended in Room 20, and a 3B-2 occurrence was categorized.</p>									
<p>Contractor Action: All hoisting and rigging activities related to Room 20 D&D were suspended. All D&D work in Room 20 that could potentially damage the wet pipe sprinkler system was suspended. Select D&D work can be performed under the current USQD with 9206 Operations Manager concurrence.</p> <p>Event notifications were made to: PSS, Acting Projects Division Manager, NNSA Facility Representative, NNSA Safety Basis Representative, Production Facilities Department Manager, Facility Safety, 9206 ConOps Representative, Fire Protection Engineer, FPE System Engineer, and the DNFSB representative.</p>						<p>Safety Basis Document Corrective Actions (CA): Revise and submit to NNSA the annual update to the 9206 BIO. The revised BIO will address deactivation and demolition activities. Closure Criteria: Copy of transmittal letter and pages referencing D&D activities Cause Addressed: A4B5C04</p> <p>Final 6/27/05</p>			
<p>DOE Field Office Action: Reviewed lessons learned and corrective action plan.</p>						<p>All CA Status: Action completed.</p>			
<p>EH-23 Assessment: Cause: Equipment Malfunction/Failure</p>									

ORPS ID Status	ORO--BJC-Y12WASTE-2005-0002 Final	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	A2
Title	WETF Facility Categorization			Date and Time Discovered	06/02/2005 15:42 (ETZ)				
Site/Facility	East Tennessee Technology Park/Facility D&D/K-25/K-27 Project			DOE Secretarial Office	EM - Environmental Management				
Facility Manager Phone	C. E. Frye (865) 574-9999			Local DOE Contact Phone	Bryan Neal Not Available				
Originator Phone	James K. Pemberton (865) 574-3282			Contractor	Bechtel Jacobs Company, LLC				
<p>Description: In January 2005 a management concern occurrence was filed to review the proper categorization of all facilities that used nature of process as the primary line of defense for a criticality incredible argument. In the review document it was stated that WETF would require revision of its supporting documents to continue to be categorized as a less than Category 3 facility. After review of the current operating requirements and controls, it has been determined that a Potentially Inadequate Safety Analysis (PISA) on nuclear categorization of WETF, as operated today, exists.</p> <p>While the PISA involves recategorization, the controls established by the governing nuclear criticality evaluations and the safety basis document provide a continued safe operating environment. The evaluations support the conclusion that Criticality Alarm System coverage is not necessary as incredibility is established with the use of existing controls.</p>									
<p>Contractor Action: 1) The requirements within the existing Nuclear Criticality Safety Evaluation (NCSE-YT-WETF-1505, Rev.1) are elevated as a specific compensatory measure for current operations. All existing facility controls shall continue in place. 2) All incoming receipts and tank to tank transfers will be reviewed and approved by the Facility Manager and a qualified Senior Nuclear Criticality Engineer. (DOE will be given sufficient notification of these work activities.) 3) Determine if the facility Waste Acceptance Criteria (WAC) can be modified so that the WETF can be operated as less than Category 3. 4) Submit an Evaluation of Safety or Justification for Continued Operation.</p>							<p>Safety Basis Document Corrective Actions (CA): Additional time is required to perform the calculations to support final WETF facility categorization. The Final Report will be issued when the facility categorization is known. In the interim, a Justification for Continued Operation, JCO-YT-WETF-0100, Rev. O, was issued on June 28, 2005. The Final Report will be submitted on or before August 31, 2005.</p>		
<p>DOE Field Office Action: JCO is being reviewed.</p>							<p>All CA Status: Incomplete.</p>		
<p>EH-23 Assessment: Cause: Unanalyzed Material Inventory.</p>									

ORPS ID Status	RFO--KHLL-D&DOPS-2005-0009 Final	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None	USQ Cause Code	A2
Title	Sample Results of Tank T231B Sludge Exceed Hazard Category Criteria Resulting in Unreviewed Safety			Date and Time Discovered		04/26/2005 14:45 (MTZ)			
Site/Facility	Balance of Plant - Infrastructure, Building 9206 Room 20			DOE Secretarial Office		NNSA - National Nuclear Security Administration			
Facility Manager Phone	Ty Vess (303) 966-6540			Local DOE Contact Phone		Deanna McCranie Not Available			
Originator Phone	Robert D. Plappert (303) 966-6363			Contractor		Kaiser-Hill Company, L.L.C.			
Description: On April 26, 2005, preliminary sample results from sludge contained in the bottom of process liquid waste storage tank T231B (estimated to be approximately 50,000 pounds) indicated the potential to exceed the lower nuclear material inventory threshold of a Hazard Category 3 nuclear facility. (This tank is no longer in service and is being prepared for demolition). The Site Safety Analysis Report (SSAR) Facility Safety Analysis (FSA) for the Aqueous Waste Transfer Project (AWTP) presently categorizes T231B as a radiological facility. More extensive sampling was conducted to more accurately characterize this condition. A Discovered Condition Screen was performed and indicated the potential for a positive Unreviewed Safety Question (USQ). On May 6, 2005, based on the laboratory analysis results of the samples and the radiation scan results, the USQ determination concluded that the analyzed amount of nuclear material in the T231B sludge exceeds the lower threshold of a nuclear Hazard Category 3 facility. The results indicated approximately 5 grams of Pu and 0.08 grams of Am-241. Consequently, the USQ determination is positive, and this event is being re-categorized under ORPS criteria 3(B)(1) .									
Contractor Action: Operations involving tank T231B were suspended. A Discovered Condition Screen was initiated. Work activities were properly suspended following the discovery of this event. Proper reporting was conducted including submitting this incident into the PAAA Non-Compliance Tracking System (NTS). Since there was no remaining mission for the tank and it was to be demolished, a Justification for Continued Operation (JCO) was submitted to DOE, RFPO (in lieu of preparing a new authorization basis document to upgrade the facility to HC 3) providing a safety evaluation and hazard controls to remove the sludge from the tank and continue with the demolition. The JCO was approved by DOE-RFPO, the sludge was removed from the tank without incident, and the tank has been demolished at the time of this report submittal.						Safety Basis Document Corrective Actions (CA): Review other FSAs and Auditable Safety Analyses (ASAs) to determine if any similar, potential hazard categorization issues exist. Review other tank systems that are collection points to determine if any other similar potential for buildup of radioactive material exists. Final 7/28/05			
DOE Field Office Action: Reviewed the JCO and corrective actions.						All CA Status: Action completed.			
EH-23 Assessment: Cause: Unanalyzed Material Inventory									

ORPS ID Status	RL--PHMC-327FAC-2005-0001 Final	Reporting Criteria	3B(1)	Category	2	ES&H Impact	No	USQ Cause Code	A7
Title	Unexpected Safety Concerns After Removing Ion Exchange Columns			Date and Time Discovered	4/20/05 10:50 (PTZ)				
Site/Facility	Hanford Site/327 Facility			DOE Secretarial Office	EM - Environmental Management				
Facility Manager Phone	R. E. Gregory (509) 373-9980			Local DOE Contact Phone	Joe Waring Not Available				
Originator Phone	Newell L. Crary (509) 376-3030			Contractor	Project Hanford Management Contractor				
<p>Description: Two ion exchange columns were used in the 1970s to remove contamination from the water in the building 327 wet storage basins. Subsequently, it was determined that they were not necessary to purify water in the basins, and although they remained in place, they were not used. For some time it was planned to remove these columns. A 1993 analysis indicated that this would not result in significant hazards. However, a more recent analysis (2005) indicates that the production of hydrogen was earlier under-predicted and that the radiological consequences of removing these columns using the updated hydrogen estimation could result in a new (and potentially bounding) accident scenario.</p> <p>The best course of action is to not remove these ion exchange columns.</p> <p>Although this USQD has many facets, it is best described for cause code purposes as a previously unanalyzed accident scenario in the DSA.</p>									
<p>Contractor Action: Implement compensatory measures through procedures to prohibit any work being done to the ion exchange columns. Prepare a justification for continued operations and a lessons learned report.</p>							<p>Safety Basis Document Corrective Actions (CA): Prepared procedures. Lessons learned report completed and JCO preparation (CARF#20050634) due October 2.</p>		
<p>DOE Field Office Action: Approve JCO.</p>							<p>All CA Status: JCO scheduled for October 2005; other 2 complete.</p>		
<p>EH-23 Assessment: Review status and milestones. Cause: Unanalyzed Accident</p>									

ORPS ID Status	RL--PHMC-GENSERVICE--2005-0001 Final	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None reported	USQ Cause Code	B2.i
Title	Positive USQ Related to Transportation Safety Document			Date and Time Discovered	5/03/05 11:00 (PTZ)				
Site/Facility	Hanford Site/Hanford K Basins			DOE Secretarial Office	EM - Environmental Management				
Facility Manager Phone	Rhonda R. Connolly (509) 373-4328			Local DOE Contact Phone	D. H. Splett Not Available				
Originator Phone	Elizabeth Poole (509) 373-0522			Contractor	PROJECT HANFORD MANAGEMENT CONTRACTOR				
<p>Description: This event stems from a similar USQ in December 2004. A safety review uncovered an error in the radioactive inventory in a shipping container for ion exchange columns. The ion exchange columns are shipped by the K Basin Project. The previous analysis was done in September 2002 (HANF-2760). The error appears to be a transposition error from one document to another.</p> <p>The principal cause is inadequate or flawed analysis (in this case an error),</p>									
<p>Contractor Action: Correct error and perform lessons learned.</p>							<p>Safety Basis Document Corrective Actions (CA): Eight CAs identified (CARF20050719), some completed. All scheduled for completion in September 2005.</p>		
<p>DOE Field Office Action: Review status of actions.</p>							<p>All CA Status: Seven appear to be complete.</p>		
<p>EH-23 Assessment: They appear to be on track to completion. Cause: Inadequate DSA Analysis</p>									

ORPS ID Status	RL--PHMC-PFP-2005-0012 Final	Reporting Criteria	3B(1)	Category	2	ES&H Impact	None reported	USQ Cause Code	B4.i
Title	Ventilation exhaust damper sticks			Date and Time Discovered	5/13/2005 13:15 (PTZ)				
Site/Facility	Hanford Site/Building 2736-ZB, Plutonium Finishing Plant			DOE Secretarial Office	EM - Environmental Management				
Facility Manager Phone	B. J. Gray (509) 373-7221			Local DOE Contact Phone	None Not Available				
Originator Phone	Charles P. Ames (509) 376-6377			Contractor	Project Hanford Management Contractor				
<p>Description: Exhaust Damper D-17 for Room 637 was occasionally observed to remain stuck in either the closed position--potentially bypassing HEPA filters and/or building confinement--or in the 3/4 open position. It appears to be aging of the damper since the facility is over 30 years old. Since the DSA did not consider a stuck closed scenario, this resulted in a USQ.</p> <p>Since this appears to be a problem of aging, it was assigned Cause Code B4.i. A3 and A6 are also candidate causes. Unidentified accident scenarios also candidate cause.</p>									
<p>Contractor Action: Disconnect appropriate instrument air from D-17 and remove caution tag from EV-19 to avoid open position of damper.</p> <p>Revise safety analysis to address all failure modes of damper, including stuck open mode.</p> <p>Review for similar events in other safety related systems.</p>							<p>Safety Basis Document Corrective Actions (CA): Disconnect instrument air and caution tag completed.</p> <p>Revise safety basis completed.</p> <p>Review similar sequences scheduled for early 2006. Tracking ID: CARF#20050776</p>		
<p>DOE Field Office Action: Review status of actions.</p>							<p>All CA Status: Two complete; one incomplete.</p>		
<p>EH-23 Assessment: They appear to be on track to completion. Cause: Equipment Malfunction</p>									

ORPS ID Status	SR--WXRC-WVIT-2005-0003 Final	Reporting Criteria	3B(1)	Category	2	ES&H Impact	Potential existed	USQ Cause Code	B2.xi
Title	Unanalyzed Hydrogen Vapors Impacts - Potential Inadequacy in the Safety Analysis (PSIA)			Date and Time Discovered		04/01/2005 14:00 (ETZ)			
Site/Facility	Savannah River Site/Defense Waste Processing Facility			DOE Secretarial Office		EM - Environmental Management			
Facility Manager Phone	Tom Firestone (803) 208-6229			Local DOE Contact Phone		Tom Firestone (803) 208-6229			
Originator Phone	Harold K. Young (803) 208-6588			Contractor		Westinghouse Savannah River Company (WSRC)			
<p>Description: Facility personnel discovered concerns that hydrogen gas resulting from the effect of radiation upon water contained in the facility, or resulting from acids interacting with materials used in the facility, could possibly result in fire or explosion, which, in turn, could disable facility equipment important to facility safe operations or event recovery. This type of hydrogen hazard had been considered previously, but these newly discovered concerns had not specifically been included in previous safety basis analyses. Specifically, previous analyses had determined that certain analyzed facility locations were not at risk for hydrogen explosions, but did not sufficiently take into account the potential for adverse fire induced damage to co-located safety equipment. As a result the facility issued a "Potential Inadequacy In The Safety Analysis (PSIA)" which is the appropriate instrument for correcting such a situation.</p> <p>On June 14, 2005, facility personnel evaluating this situation upgraded the initial report to PSIA status, resulting in the report being included in this report.</p>									
<p>Contractor Action: No immediate corrective actions were initiated because such actions were determined not required in view of the fact that facility conditions were not conducive to an adverse event.</p> <p>Corrective action planning was completed and is documented to the right in this report.</p>						<p>Safety Basis Document Corrective Actions (CA):</p> <ol style="list-style-type: none"> 1. Evaluate the PSIA using the Unreviewed Safety Question Evaluation (USQE) formal process, and report results to the Facility Operations Safety Committee. Responsibility: R. Hoeppe; Target Completion: May 31, 2005; Tracking ID: 2005-CTS-002884 CA #2 2. If required, update the Documented Safety Analysis to include the analysis of trapped hydrogen scenarios. Responsibility: D Sherbourne; Target Completion: August 31, 2005; Tracking ID: 2005-CTS-002884 CA 3 			
<p>DOE Field Office Action: None specified. HQ summary acknowledges site evaluation of situation, and specifies that there existed no imminent danger with respect to facility operations, and that no compensatory actions were done.</p>						<p>All CA Status: Unverifiable.</p>			
<p>EH-23 Assessment: Cause: Safety Program Deficiencies. There is inadequate specification of ES&H impact. Even though an HQ Summary exists, one can not infer if the potential hazards had been adequately addressed.</p>									

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Appendix B
Status of Open USQs

Appendix B: Status of Current Positive USQ Occurrences Including April-June 2005 Declarations

Reported in Month	Site/Facility	ORPS ID No. Title of Occurrence Issue Level	Status
March 2004	Idaho National Engineering Lab/ Advanced Test Reactor	ID--BBWI-ATR-2004-0004 Core Feedback During Loss of Commercial Power Update issued 08/18/2005	<p>Occurrence Report No. 13, USQ No. RTC-USQ-2005-336, Discovered: June 15, 2005, 1610: The ATR SINDA-SAMPLE code models the variation in flow rate in the hot fuel plate analysis. The model development did not explicitly address some pertinent sources of uncertainty and therefore may not be conservative.</p> <p>Occurrence Report No. 14, USQ No.: RTC-USQ-2005-248, Discovered: May 4, 2005, 1630: The derivation of the analytical limit setpoint and response time are not consistent with the methods used in the radiological consequence analyses presented in SAR-153, Section 15.7 and 15.12. The methodology used for the derivation of the setpoint could allow higher off-site doses than predicted by the radiological consequence analyses. Since these radiological consequence analyses are the basis upon which DOE approved operation of the ATR, the discrepancy represents a potentially inadequate safety analysis.</p>
April 2004	Los Alamos National Laboratory/ LANL	ALO-LA-LANL-LANL-2004-0007 Inadequate Documented Safety Analysis Concerning Type A Designated Packaging used for Fissile Content Update	<p>05-13-04: The reporting criteria was upgraded from 3B(2) to 3B(1), i.e., the positive USQD was declared.</p> <p>Last update 7/1/04. All corrective actions are completed by 6/15/05.</p>
August 2004	Hanford/ PFP	RL--PHMC-PFP-2004-0027 Tank D-8 block is spalled and is structurally inadequate to support additional weight Final	All actions complete or placed in an internal tracking system as of 6/30/05. Tracking ID 20041429.
August 2004	Hanford/ PFP	RL--PHMC-PFP-2004-0028 Updated version of CFAST fire modeling yielded greater predicted fire temperature Final	Final report was issued on 12-22-04. However, a revision was issued on 01-06-05. Corrective actions are complete as of 3/31/05.
August 2004	INEL/ IFM Storage	ID--BBWI-FUELCSTR-2004-0002 Potential Inadequacy in Safety Analysis, FAST TRIGA Fuel Storage Final issued: 12/8/2004	Last update: 12-07-04. Five corrective actions (two completed) are scheduled for completion by 6/13/05. Corrective actions focus on developing an appropriate lessons learned program including insights of similar sprinkler heads in other facilities.

Reported in Month	Site/Facility	ORPS ID No. Title of Occurrence Issue Level	Status
August 2004	LLNL/ BOP	OAK-LLNL-LLNL-2004-0040 Potential cracking in Glove box Exhaust Ducting in Bldg. 332 RMA Update	Latest Update: 05-05-05: 11/22/04: The USQD has been completed for this OR and it is positive. This will change the categorization of the OR to Group 3, Nuclear Safety Basis, B. Documented Safety Analysis Inadequacies, (1) Determination of a Positive Unreviewed Safety Question (USQ), with a Significance Category of 2. The USQD was done in response to the PISA that was filed. Facility Manager: Several ORs are all currently being worked in parallel and will require additional time to complete and review for signature. The date for evaluation 07-30-05.
September 2004	Hanford Site/ Plutonium Finishing Plant	RL--PHMC-PFP-2004-0030 New assay of empty drums stored in PFP tunnels showed increased hold-up values Final	Four corrective actions developed (one on a DSA update and the remainder focusing on lessons learned) are now complete or placed in an internal tracking system as of 6/30/05 (CARF #20041447).
September 2004	Hanford Site/ Plutonium Finishing Plant	RL--PHMC-PFP-2004-0031 Procedure allowed more plutonium per 55-gallon drum than assumed in the DSA Final	Five corrective actions developed (one on a DSA update and the remainder focusing on lessons learned) are now complete or placed in an internal tracking system as of 5/31/05 (CARF #20041550).
September 2004	Hanford Site/ Plutonium Finishing Plant	RL--PHMC-PFP-2004-0032 Errors in Safety Systems, Descriptions, Equipment List, and Essential Drawings Final	Seven corrective actions developed and were completed or placed in an internal tracking system by 7/30/05 (CARF #20041551).
September 2004	Hanford Site/ Plutonium Finishing Plant	RL--PHMC-PFP-2004-0033 TSR controls for 241-Z tank cells are insufficient Initial-Final Issue	Four corrective actions focusing on DSA and lessons learned. Completed by 7/30/05 (CARF #20041578).
September 2004	Hanford Site/ Spent Nuclear Fuels Project	RL--PHMC-SNF-2004-0030 Conversion Error Identified Related to Mass/Reaction Surface Area of Fuel Chip Canisters Final	Seven corrective actions identified and all completed as of 4/1/05 (CARF #20041600).
August 2004	INEL/ IFM Storage	ID--BBWI-FUELCSTR-2004-0002 Potential Inadequacy in Safety Analysis, FAST TRIGA Fuel Storage Final issued: 12/8/2004	Last update: 12-07-04. Five corrective actions (two completed) are scheduled for completion by 6/13/05. Corrective actions focus on developing an appropriate lessons learned program including insights of similar sprinkler heads in other facilities.

Reported in Month	Site/Facility	ORPS ID No. Title of Occurrence Issue Level	Status
September 2004	Idaho National Engineering Lab./ ICPP Fuel Receipt & Storage Act.	ID--BBWI-FUELCSTR-2004-0003 Potential Inadequacy Safety Analysis for ATR Fuel Un-loading Bucket and Stand Final Rev. 1 Issued:12/16/2004	1. Revise SAR-113/TSR-113 to provide controls that will allow the use of fuel packaging equipment to package ATR aluminum fuel. Target Completion Date: 3/28/2005 2. Revise SAR-113/TSR-113 to allow use of the BS-FS-901/901A repackaging stands in their existing configuration (October 2004). Target Completion Date: 03/31/2005 3. Perform an analysis of FSA fuel packaging equipment to ensure it will perform its intended function for planned fuel movement activities. Target Completion Date: 12-24-2004
September 2004	Los Alamos National Laboratory/ Plutonium Proc & Handling Fac	ALO-LA-LANL-TA55-2004-0009 Modification to TA-55 Fire Detection System Results in Positive Unreviewed Safety Question Update (2/18/2005)	Add Second Fire Alarm Wiring Path. Add a second path for fire alarm transmission to the CAS through concentrator 009 in PF-3. Responsible Group/Division FM-TA-55. Target Completion Date: 7-15-05 Completion Date: 04/20/2005 Reconnect PF-10 and PF-11 Fire Alarms to FCS. Use the second wiring path to reconnect the PF-10 and PF-11 fire alarms to the FCS Responsible Group/ Division FM-TA-55. Target Completion Date: 7-15-05 Completion Date: 04/20/2005
September 2004	Oak Ridge National Laboratory	ORO--ORNL-X10HFIR-2004-0014 Pool Floor Structural Loading Calculation Errors (Positive USQ) Final	No further action required. DOE approved operations via a JCO on 9/30/2004. Final, 8/17/05.
October 2004	Hanford Site/ Plutonium Finishing Plant	RL--PHMC-PFP-2004-0037 Non-compliance with National Fire Protection Association requirements Final	All corrective actions completed or placed in an internal tracking system as of 6/30/05 (CARF #20041779).
October 2004	Hanford Site/ Remedial Action Projects	RL--BHI-REMACT-2004-0015 Potential Inadequacy of the Safety Analysis at the 100 B/C Burial Grounds Remedial Action Project Final	All corrective actions completed as of 1/31/05. Tracking ID: RL-BHI-REMACT-2004-0015
October 2004	Idaho National Engineering Lab./ Advanced Mixed Waste Treatment Fac	ID--BNFL-AMWTF-2004-0024 Positive USQ Reveals Inadequacy in the Documented Safety Analysis Final Issued 6/21/2005	An anomaly was discovered in the Fissile Tracking System (FTS) software that might allow the transport of a fissile waste container with potentially invalid assay results past interlocks designed to prevent exceeding fissile mass control limits. The software and interlocks are described in the Documented Safety Analysis as "safety significant." Failure of the interlocks to prevent the entry of a waste container with invalid assay results into a controlled area could potentially lead to inadvertently exceeding nuclear material safety limits. The immediate action taken was to put the interlocks controlled by FTS in "suspension," a safe mode of operation that will disallow movement of waste containers through the treatment process. Waste containers currently in the process were verified not to exceed fissile mass control limits and to have valid assay results.

Reported in Month	Site/Facility	ORPS ID No. Title of Occurrence Issue Level	Status
October 2004	Lawrence Livermore National Lab./ Lawrence Livermore Nat. Lab. (BOP)	OAK--LLNL-LLNL-2004-0053 Potential Inadequacy in the Bldg. 332 Safety Analysis Latest issue 7-25-05	Is Further Evaluation Required?: Yes If YES - Before Further Operation? No By whom? Facility Management By when? 9/30/05 No changes 9/7/05
October 2004	Lawrence Livermore National Lab./ Lawrence Livermore Nat. Lab. (BOP)	OAK--LLNL-LLNL-2004-0056 Potential Inadequacy in the Bldg. 332 Safety Analysis Update, latest issue 08-19-05	As of 9/7/05: Revise the current Safety Basis Documentation Target completion 12/19/05
October 2004	Oak Ridge National Laboratory/ High Flux Isotope Reactor	ORO--ORNL-X10HFIR-2004-0015 New Information on Check Valve Induced Water Hammer (Positive USQ) Update	Is Further Evaluation Required?: Yes If YES - Before Further Operation? No By whom? Safety Analysis Staff By when? Simultaneous operation of all four primary coolant pumps is prohibited by the new administrative controls pending further evaluations; 10/9/04.
November 2004	Hanford Site/ Plutonium RL-- PHMC-PFP-2004-0040 Update Finishing Plant	RL--PHMC-PFP-2004-0040 (X/Q)s utilized for analyses of exterior fires may not be appropriate Final	All corrective actions completed by 4/4/05 (CARF #20041905).
November 2004	Hanford Site/ Solid Waste Operations Complex	RL--PHMC-SWOC-2004-0002 USQ:Entrainment Effects in an Outdoor Fire Event Final	All corrective actions completed by 4/4/05. Tracking ID: AR29020156
November 2004	Hanford Site/ Spent Nuclear Fuels Project	RL--PHMC-SNF-2004-0036 Concern Over the Outside Storage of Low Level and CERCLA Waste at 100K Area Final	All actions completed or identified in a tracking system as of 4/15/05 (CARF #20041849).
November 2004	Los Alamos National Laboratory/ Waste Management	ALO-LA-LANL-WASTEMGT-2004-0009 Unreviewed Safety Question at the Radioassay and Nondestructive Testing (RANT) Facility Final 7/27/05	Corrective Actions #1 and #2 completed on 3/8/2005 and 4/5/2005 respectively.

Reported in Month	Site/Facility	ORPS ID No. Title of Occurrence Issue Level	Status
December 2004	Hanford Site Generator Services	RL--PHMC-GENSERVICE-2004-0002 Positive USQ Related to the Transportation Safety Document Final	Seven corrective actions were identified and are assigned to an internal tracking system (CARF #2005-0002). Complete as of 8/1/05.
December 2004	Hanford Site/ Plutonium Finishing Plant	RL--PHMC-PFP-2004-0043 Documented Safety Analysis doesn't consider effects of vehicle fuel fire Final	All actions complete as of 4/29/05 (CARF #20042020).
January 2005	Hanford Site/Tank Farms	RP--CHG-TANKFARM-2005-0002 Positive Unreviewed Safety Question Determination Declared Due To Concerns With C 200 Series Tanks Exhauster Variable Frequency Drive (USQ) Final	The inadvertent credit for Variable Frequency Drive (VFD) operation resulted in accident consequences "without controls" being below guidelines and therefore, no control (safety structures, systems, and components or Technical Safety Requirements (TSR)) was identified for the filtration failures leading to unfiltered release for accident for 200-Series single shell tank vacuum retrieval systems. Controls are present in the system (e.g., exhaust fan controls systems, VFD speed limit interlocks, High Efficiency Particulate Air Filtration, elevated release through an exhaust stack) but none of these controls was designated safety significant or included in the TSR. Lessons learned to be issued by 6/15/2005.
January 2005	Idaho National Engineering Lab/ICPP Fuel Receipt & Storage Act	ID--BBWI-FUELRCTR-2005-0001 Potential Inadequacy in Safety Analysis, Cask Centering Device Update	Revise the safety basis (SAR-112) to ensure that operational limitations concerning the use of the Cask Centering Device are addressed. Target Completion Date: 10/05/2005 Tracking ID: AI 35867 Perform a detailed review to determine if other SAR-112 safety significant SSCs exist that are not adequately analyzed for operating temperature ranges. Target Completion Date: 05/05/2005 Tracking ID: AI 35869
January 2005	Oak Ridge National Laboratory	ORO--BJC-X10WSTEMRA-2005-0001, Concern Over Use of Fuel Trucks at 100K Area - Inadequacy in the Safety Analysis Final	Discrepancy Between Melton Valley Solid Waste Storage Facilities Documented Safety Analysis and Technical Safety Requirements Status: Storage of waste in metal containers at the facilities resulted in a positive Unreviewed Safety Question Determination (USQ). Four metal boxes, one 55-gallon drum and one sea-land container were removed from the 7822J pad. The remaining metal box was placed inside a concrete vault in order to comply with the Documented Safety Analysis analyzed conditions, and remains in storage at the 7822J pad. Final 4/18/2005.
February 2005	Hanford Site 105K Basin	RL-PHMC-SNF-2005-0002 Concern Over Use of Fuel Trucks at 100K Area - Inadequacy in the Safety Analysis Final	All actions complete or placed in an internal tracking system as of 5/31/05 (CARF 20050229).

Reported in Month	Site/Facility	ORPS ID No. Title of Occurrence Issue Level	Status
February 2005	Idaho National Laboratory/Fuels Manufacturing/Fuel Assembly Storage	ID--BEA-TMF-2005-0001 Relative to the Exclusion of Materials In the Vault Storage from Material at Risk Update	Is Further Evaluation Required?: Yes If YES - Before Further Operation? No By whom? Safety Engineering By when?
February 2005	ORNL/ High Flux Isotope Reactor.	ORO--ORNL-X10HFIR-2005-0004/ Discovery of Second Discrepant Condition in Seismic Analysis Bases Calculation (USQ) Final	Occurrence report ORO-ORNL-X10HFIR-2005-0004 reporting the second PISA was submitted on February 11, 2005. Due to the inability to resolve the additional anomalies in a timely manner, the occurrence was upgraded to a positive USQ on February 24, 2005. A safety evaluation and justification for continued operation of the HFIR was prepared considering the USQ and was approved by DOE-OR on April 1, 2005, with an expiration date of September 30, 2005. Final 8/17/05.
March 2005	Hanford Site 209 E Building	RL-PHMC-CENTPLAT-2005-0003 Unreviewed Safety Question (USQ) at 209-E, Nominal Inventory in the DSA Increased by 90g Plutonium Final	Seven corrective actions underway and are due by 12/1/05 (CARF 20050402).
March 2005	Sandia National Laboratories	ALO-KO-SNL-6000-2005-0004 Declaration of PISA based on SB issues raised by DOE/OS assessment Final 6/22/05	Target completion date for all CAs: 9/30/06
March 2005	Savannah River, Central Laboratories, 772-F	SR--WSRC-CLAB-2005-0002, Positive USQ for Worker Safety Issues, TRU Waste Drums (U) Update: 05-05-05	Final Issue. Updated 04-18-05: The reporting criteria was upgraded from 3B(2) to 3B(1), following determination of a positive USQ. Latest Update: 5/5/05: This update is identified as "UPDATE/FINAL" however, final date and time blocks are blank. 06-23-05: Awaiting completion of CA "Revise the JCO to return the TRU drums to SWMF". Tracking ID: 2005-CTS-002653 CA # 1 Target Completion Date: 06/30/2005
March 2005	Savannah River, SWMF/TRU Waste Drums	SR--WSRC-SW&I-2005-0010, Positive USQ for Worker Safety Issues, TRU Waste Drums Final Issued 05-26-05	Initial-Final Issue. Final report was issued on 05-26-05. 06-23-05: DOE-SR concurs in this report and the referenced TRU Waste Corrective Action Plan. The positive USQ does not challenge public safety guidelines.
April 2005	ETTP Facility D&D/K-25/K-27 Project	ORO--BJC-K25ENVRES-2005-0009, Potentially Inadequate Safety Analysis, Storage Yard Final	The preliminary non-destructive analysis (NDA) data of some drums indicates that the containers contain fissile material in excess of the BJC-NS-1003, Rev. 7 exempt limits. Compensatory measures in effect. Five containers to be moved to compliant storage. 6/29/05.

Reported in Month	Site/Facility	ORPS ID No. Title of Occurrence Issue Level	Status
April, 2005	Idaho National Laboratory / Treatment Storage and Disposal	ID--BEA-TSD-2005-0002 Determination of Positive USQ Relative to the Hazard Analysis of the MFC Transportation Safety Doc Final	1. Develop and transmit to the Department of Energy-Idaho Operations Office a work plan for upgrade of Materials and Fuels Complex Nuclear Safety Basis Documents. Target Completion Date: 05/02/2005 Tracking ID: 2005-0018 2. Implement the TSR-Level Administration Controls identified in the ESS. Target Completion Date: 08/15/2005 Tracking ID: 2005-0029
April 2005	ORNL, Balance of Plant infrastructure.	ORO--ORNL-X10BOPLANT-2005-0003, Performance Analysis Identifies Deficiencies in Facility Hazard Categorization as a Recurring Event, Final	A determination was made on 4/8/2005 to issue a "Recurring Occurrence Report", pertaining to the facility hazard categorization process. This process was previously identified as having programmatic deficiencies and is being reported separately now. Deficiencies in the interim storage and transport of materials is being addressed. Independent assessment of hazard categorization will be completed by 2/10/06.
April 2005	Pantex Plant/Balance of Plant	ALO-AO-BWXP-PANTEX-2005-0044 PISA/Positive USQ on Separated Connector Cover Update	Two corrective actions identified and completed on 5/13/05.
April 2005	Pantex Plant/Balance of Plant	ALO-AO-BWXP-PANTEX-2005-0047 Unexpected Application of Pressure Over Procedural Limit Final	Six corrective actions identified and completed by 8/10/05. Final report issued on 8/12/05.
April 2005	Richland 327 Facility Wet Storage Basin Ion Exchange Columns	RL--PHMC-327FAC-2005-0001 Final	Four corrective actions identified and due by 10/04/05 (CARF #20050634)
April 2005	Rocky Flats Environment. Technology Site. Nuclear Waste Operations/Disposal	RFO--KHLL-D&DOPS-2005-0009 Sample Results of Tank T231B Sludge Exceed Hazard Category Criteria Resulting in Unreviewed Safety Question (USQ). Final	On April 26, 2005 preliminary sample results from sludge contained in the bottom of process liquid waste storage tank T231B (estimated to be approximately 50,000 pounds) indicated the potential to exceed the lower nuclear material inventory threshold of a Hazard Category 3 nuclear facility. A Justification for Continued Operation to authorize removal of sludge and demolition of the tank is being submitted to DOE, RFPO for approval.
April 2005	Savannah River, Defense Waste Processing Facility (WVIT/DWPF)	SR--WSRC-WVIT-2005-0003, Unanalyzed Hydrogen Vapors Impacts - Potential Inadequacy in Safety Analysis (PSIA). Final	Initial report was issued on 04-04-05. Final Issue: June 14, 2005. 06-14-05: The initial report described the potential for hydrogen gas to accumulate in certain, isolated areas of the plant, which, in turn, could adversely affect co-located safety equipment following a postulated hydrogen ignition. This was not previously addressed in safety basis documents. The report was upgraded to PSIA (Potential Inadequacy in Safety Analysis) status on June 14, 2005, causing it to be included and tracked in this report.

Reported in Month	Site/Facility	ORPS ID No. Title of Occurrence Issue Level	Status
May 2005	ETTP Facility D&D/K-25/K-27 Project	ORO--BJC-K25ENVRES-2005-0013, Declaration of a Potential Inadequacy of the Document Safety Analysis (PISA)-Inadequate Radiation Criticality Accident Alarm System (RCAAS) Coverage in K-25 Building Final	A Criticality Safety Officer observed that RCAAS detector Cluster 43 was in a location different than shown on the historical documents during walk- down of building K-25. With the issuance and acceptance of DOE SER approval, the required K25/K27 D&D Project safety basis revisions to address the PISA and positive USQD have been completed. 8/16/05.
May 2005	Pantex Plant/Balance of Plant	ALO-AO-BWXP-PNTEX-2005-0057 Positive USQ, SS-21 Development: 150 psi Control on the Phoenix Cart Update	Correction actions are to be developed.
May 2005	Richland Building 2736-ZB, Plutonium Finishing Plant	RL--PHMC-PFP-2005-0012 Final	Four corrective actions identified, due 8/25/05 (CARF #20050776).
May 2005	Richland K-Basins	RL-PHMC-GENSERVICE-2005-0001 Final	Eight corrective actions identified (CARF20050719). All but one are completed.
May 2005	Y12 National Security Complex	ORYS-YSO-BWXT-Y12NUCLEAR-2005-0011, Positive PISA - HF Piping System Update	On May 3, 2005, a failure mode of the hydrogen fluoride piping was discovered that had not been analyzed in the Basis for Interim Operations (BIO). Justification for Continued Operations (JCO) is being submitted to DOE along with corrective action plan by 9/20/05.
May 2005	Y12 National Security Complex	ORYS-YSO-BWXT-Y12SITE-2005-0008, Hoisting and Rigging Activities associated with Demolition of 9206 Room 20 result in a USQD Final	After performing lifting activities associated with the demolition of Building 9206 Room 20, a potential inadequacy in the facility's safety analysis (USQD) was discovered. A protective structure was installed around the wet pipe sprinkler system obstructing its safety function.
June 2005	ETTP Facility D&D/K-25/K-27 Project.	ORO--BJC-K25ENVRES-2005-0014, Potentially Inadequate Lube Oil Inventory Assumption in K25 and K27 Buildings Documented Safety Analysis Final	The Documented Safety Analysis for the K-25 and K-27 Facilities provides the residual quantities of lube oil remain in the tanks and pumps within the buildings. The original volume estimates were not conservative and that more oil is found in the facility components. The incorrect engineering estimate did not result in any Environmental, Safety or Health impacts on the facility provided the oil is stored in the correct configuration. Revised the DSA and TSR to include the controls for removal of Lube Oil to be approved by DOE. Final 7/28/05.

Reported in Month	Site/Facility	ORPS ID No. Title of Occurrence Issue Level	Status
June, 2005	Idaho National Engineering Lab. / ICPP Landlord Activities	ID--CWI-LANDLORD-2005-0003 Positive PISA Screen For CPP-602 Laboratory Update: 7-19-2005	1. Submit revised SAR-121 to DOE-ID for annual review, incorporating PISA revisions and clearly tracing identification of uranium toxicity through all appropriate sections of chapter 3 and chapter 5. Target Completion Date: 01/31/2006 Tracking ID: DR 38537, AI 37120 2. Provide training for ALD technical staff addressing MAR/accident analysis concepts for hazardous materials, with emphasis on uranium toxicity (to be included in SAR-121 annual tech staff training).
June 2005	Los Alamos National Laboratory/Chemistry and Metallurgy Research	ALO-LA-LANL-CMR-2005-0002 Unreviewed consequences of Dropping a Heavy Load in Wing 9 of CMR Determined to be Positive USQD Update	Corrective actions to be developed.
June 2005	Y12 National Security Complex, Balance of Plant infrastructure.	ORO--BJC-Y12WASTE-2005-0002, WETF Facility Categorization. Update	After review of the current operating requirements and controls, it has been determined that a Potentially Inadequate Safety Analysis (PISA) on nuclear categorization of WETF (cat3), as operated today, exists. Update 7/11/2005: The Final Report will be issued when the facility categorization is known. In the interim, a Justification for Continued Operation was issued on June 28, 2005. The Final Report will be submitted on or before August 31, 2005.

Appendix C

USQ Safety Basis Document Cause Codes

Unreviewed Safety Questions (USQs) Cause Codes

Potential Unreviewed Safety Questions (USQs) for a facility arise in situations involving events, discoveries, proposed changes in operations to conduct new tests, experiments, D&D, changes in or removal of existing equipment or equipment specifications or introducing new equipment etc., each of which may have safety implications that either are not addressed or are inadequately addressed in the facility's documented safety analysis (DSA), such as: SAR (including SER), BIO, JCO, etc. Any of these situations would trigger a USQ determination process.

Naturally, for a facility without any DSA, virtually every proposed activity in the facility with the potential for an accident constitutes a USQ situation.

There are mainly two types of USQ situations as indicated below:

- A. Potential new accident scenarios that are not analyzed in the DSA
- B. Potential accident scenarios that are not fully analyzed in the DSA and may have
 - potentially higher likelihood of occurring or
 - potentially higher consequences from occurrence of the accident than those estimated in the DSA.

In the following tables, a compilation of causes for the potential USQ situations is developed. A code is assigned to each of these causes for simplicity of tracking.

Table 1: Type A USQs

Cause Description	Assigned Code
Nonexistent DSA	A1
Discovery of certain radioactive or other hazardous material in the facility inventory that may cause an event scenario with potential for a radiological release that is not analyzed in the DSA	A2
Recognition of chemical and physical properties of radioactive or other hazardous material in the facility inventory that may cause an event scenario with potential for a radiological release that is not analyzed in the DSA	A3
Mission or procedure change during facility operations or change to facility itself which is not addressed in the DSA	A4
Proposed change in the equipment specifications, removal of equipment, or introduction of new systems or equipment into the facility for change in mission, activity or operating procedure, such as during D&D, new experiments, tests, etc.	A5
Inadequate or missing safety systems or barriers to radioactive material release	A6
Potential accident scenarios missed in the DSA	A7

Table 2: Type B USQs

Cause Description	Assigned Code
Accident scenario lacks depth and details: An accident scenario identified in the DSA is not pursued in detail from the initiating event (including its frequency) through: the safety systems response, accident phenomenology and progression, radioactive material behavior, and potential radioactivity release into the work areas inside and to the environment outside of the facility and the consequences of such releases.	B1
Inadequate or flawed analysis (including errors in analysis softwares):	B2.i - xi
i. Seismic, and other natural phenomena and external hazards	
ii. Structural	
iii. Fire	
iv. Criticality	
v. Chemical and/or radiological safety	
vi. Packaging/storage/waste tanks/transportation	
vii. Shielding	
viii. Equipment design, sizing, and qualification specifications	
ix. Airborne exposure pathway to the work areas inside and the environment outside the facility	
x. Liquid exposure pathway to the inside and outside the facility	
xi. Hazards, including explosion, electrical and other	
Deficiencies in programs	B3.i - viii
i. Maintenance (active and passive systems), surveillance, testing, inspection	
ii. Training	
iii. Radiological	
iv. Criticality safety	
v. Fire protection	
vi. Configuration management	
vii. Quality assurance	
viii. Conduct of operation and others	
Equipment malfunction/failure – random failure, maintenance failure (includes safety structure, systems and components, valves, pumps, filters, fans, blowers, resin beds, hardwares, etc.)	B4.i - v
i. Equipment aging, rusting, broken, suspect parts	
ii. Equipment unavailable	
iii. Equipment unreliable	
iv. Equipment out of calibration or alignment (sensors, detectors, meters, CAMs, etc.), interlock non-functional	
v. Others	

**Table 2: Type B USQs
(continued)**

Incorrect application of Standards, such as STD-1027, STD-3011, STD-3009, DOE-HDBK-3010-94, STD-1120, etc.	B5
Incorrect assumptions in the accident analysis in the DSA	B6.i(a-f) - ii
i. Underestimated source term due to:	
a. Overestimate of credit for packaging/barrier/confinement/waste tank/ESF integrity	
b. Underestimate of Material at Risk (MAR), Damage Ratio, Airborne Release Fraction, Respirable Fraction, Leak Path Factor	
c. Introduction of additional material at risk into, or identification of additional material at risk in the facility, not included in the DSA.	
d. Overestimate of credit for: filter efficiency, clogged filter, saturated resin beds, etc.	
e. Underestimate of spill into the facility or release to the ground or groundwater	
f. Improper binning of source terms, inadequate source term for bounding analysis.	
ii. Underestimate of $\frac{X}{Q}$ and other factors for dose estimates	
Inadequacy of TSR elements that result in undermining or invalidating the assumptions in the DSA	B7.i - ix
i. Safety Limit (SL), Limiting Control Setting (LCS), Limiting Condition of Operation (LCO)	
ii. Interlock configuration, setting, set point, alarm systems.	
iii. Pressure differentials across air- volume compartments for air leakage/flow control.	
iv. Redundancy (established invoking single failure criterion).	
v. Double contingency for criticality safety	
vi. Hazard control/safety systems, system specs, hardwares, operability.	
vii. Administrative controls, surveillance requirements.	
viii. Work procedure.	
ix. Others.	

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Office of Facility Safety (EH-2)
Office of Environment, Safety and Health
Unreviewed Safety Question Activity Report
April – June 2005